

Claims

- 1 1. An electro-optic assembly comprising first and second
2 substrates, and an adhesive layer and a layer of electro-optic material disposed
3 between the first and second substrates, the adhesive layer comprising a mixture of a
4 polymeric adhesive material and an additive selected from a salt, a polyelectrolyte, a
5 polymer electrolyte, a solid electrolyte, and combinations thereof.
- 1 2. An electro-optic assembly according to claim 1 wherein the
2 adhesive layer comprises a mixture of the polymeric adhesive material and a salt.
- 1 3. An electro-optic assembly according to claim 2 wherein the salt
2 comprises potassium acetate.
- 1 4. An electro-optic assembly according to claim 2 wherein the salt
2 comprises a quaternary ammonium salt.
- 1 5. An electro-optic assembly according to claim 4 wherein the salt
2 comprises a tetraalkylammonium salt.
- 1 6. An electro-optic assembly according to claim 5 wherein the salt
2 comprises tetrabutylammonium chloride or hexafluorophosphate.
- 1 7. An electro-optic assembly according to claim 1 wherein the
2 polyelectrolyte comprises a salt of a polyacid.
- 1 8. An electro-optic assembly according to claim 7 wherein the
2 polyelectrolyte comprises an alkali metal salt of polyacrylic acid.
- 1 9. An electro-optic assembly according to claim 1 wherein the
2 adhesive layer comprising the additive is provided with regions of differing colors and
3 serves as a color filter.
- 1 10. An electro-optic assembly according to claim 1 wherein the
2 adhesive layer comprising the additive further comprises an optical biasing element.
- 1 11. An electro-optic assembly according to claim 2 wherein the
2 adhesive layer comprises from about 10^{-6} to about 10^{-4} moles of salt per gram of
3 polymeric adhesive material.

1 12. An electro-optic assembly according to claim 11 wherein the
2 adhesive layer comprises from about 10^{-5} to about 10^{-4} moles of salt per gram of
3 polymeric adhesive material.

1 13. An electro-optic assembly according to claim 1 wherein the
2 adhesive layer comprises a polyurethane.

1 14. An electro-optic assembly according to claim 1 wherein at least
2 one of the first and second substrates comprises an electrode.

1 15. An electro-optic assembly according to claim 14 wherein each
2 of the first and second substrates comprises at least one electrode.

1 16. An electro-optic assembly according to claim 14 wherein the
2 first substrate comprises a light-transmissive electrically-conductive electrode, the
3 second substrate comprises a release sheet, and the electro-optic medium is a solid
4 electro-optic medium.

1 17. An article of manufacture comprising:
2 a layer of a solid electro-optic medium having first and second surfaces
3 on opposed sides thereof;

4 a first adhesive layer on the first surface of the layer of solid electro-
5 optic medium;

6 a release sheet disposed on the opposed side of the first adhesive layer
7 from the layer of solid electro-optic medium; and

8 a second adhesive layer on the second surface of the layer of solid
9 electro-optic medium,

10 at least one of the first and second adhesive layers comprising a
11 mixture of a polymeric adhesive material and an additive selected from a salt, a
12 polyelectrolyte, a polymer electrolyte, a solid electrolyte, and combinations thereof.

1 18. An electro-optic assembly comprising first and second
2 substrates, and an adhesive layer and a layer of electro-optic material disposed
3 between the first and second substrates, the adhesive layer comprising a mixture of a
4 polymeric adhesive material and an additive selected from a conductive metal powder,

5 a ferrofluid, a non-reactive solvent, a conductive organic compound, and combinations
6 thereof.

1 19. An electro-optic assembly according to claim 18 wherein the
2 conductive metal powder comprises nickel.

1 20. An article of manufacture comprising:
2 a layer of a solid electro-optic medium having first and second surfaces
3 on opposed sides thereof;

4 a first adhesive layer on the first surface of the layer of solid electro-
5 optic medium;

6 a release sheet disposed on the opposed side of the first adhesive layer
7 from the layer of solid electro-optic medium; and

8 a second adhesive layer on the second surface of the layer of solid
9 electro-optic medium,

10 at least one of the first and second adhesive layers comprising a
11 mixture of a polymeric adhesive material and an additive selected from a conductive
12 metal powder, a ferrofluid, a non-reactive solvent, a conductive organic compound,
13 and combinations thereof.

1 21. An electrophoretic medium comprising a plurality of capsules,
2 each of the capsules comprising a capsule wall, a suspending fluid encapsulated within
3 the capsule wall and a plurality of electrically charged particles suspended in the
4 suspending fluid and capable of moving therethrough on application of an electric
5 field to the medium, the medium further comprising a binder surrounding the capsules,
6 the binder comprising a mixture of a polymeric adhesive material and an additive
7 selected from a salt, a polyelectrolyte, a polymer electrolyte, a solid electrolyte and
8 combinations thereof.

1 22. An electrophoretic medium according to claim 21 wherein the
2 binder comprises a mixture of the polymeric adhesive material and a salt.

1 23. An electrophoretic medium according to claim 22 wherein the
2 salt comprises potassium acetate.

- 1 24. An electrophoretic medium according to claim 22 wherein the
2 salt comprises a quaternary ammonium salt.
- 1 25. An electrophoretic medium according to claim 24 wherein the
2 salt comprises a tetraalkylammonium salt.
- 1 26. An electrophoretic medium according to claim 25 wherein the
2 salt comprises tetrabutylammonium chloride or hexafluorophosphate.
- 1 27. An electrophoretic medium according to claim 21 wherein the
2 polyelectrolyte comprises a salt of a polyacid.
- 1 28. An electrophoretic medium according to claim 27 wherein the
2 polyelectrolyte comprises an alkali metal salt of polyacrylic acid.
- 1 29. An electrophoretic medium according to claim 21 wherein the
2 binder comprising the additive further comprises an optical biasing element.
- 1 30. An electrophoretic medium according to claim 21 comprising
2 from about 10^{-6} to about 10^{-4} moles of salt per gram of binder.
- 1 31. An electrophoretic medium according to claim 30 comprising
2 from about 10^{-5} to about 10^{-4} moles of salt per gram of binder.
- 1 32. An electrophoretic medium according to claim 21 wherein the
2 binder comprises a polyurethane.
- 1 33. An electrophoretic medium comprising a plurality of capsules,
2 each of the capsules comprising a capsule wall, a suspending fluid encapsulated within
3 the capsule wall and a plurality of electrically charged particles suspended in the
4 suspending fluid and capable of moving therethrough on application of an electric
5 field to the medium, the medium further comprising a binder surrounding the capsules,
6 the binder comprising a mixture of a polymeric adhesive material and an additive
7 selected from a conductive metal powder, a ferrofluid, a non-reactive solvent, a
8 conductive organic compound, and combinations thereof.
- 1 34. An adhesive comprising a mixture of a polymeric adhesive
2 material and an additive selected from a salt, a polyelectrolyte, a polymer electrolyte, a
3 solid electrolyte, and combinations thereof.

1 35. The adhesive of claim 34 wherein the polymeric adhesive
2 material is selected from a polyurethane, vinyl acetate, vinyl acetate ethylene, an
3 epoxy, a polyacrylic-based adhesive, and combinations thereof.

1 36. An adhesive comprising a mixture of a polymeric adhesive
2 material and an additive selected from a conductive metal powder, a ferrofluid, a non-
3 reactive solvent, a conductive organic compound, and combinations thereof.

1 37. The adhesive of claim 36 wherein the polymeric adhesive
2 material is selected from a polyurethane, vinyl acetate, vinyl acetate ethylene, an
3 epoxy, a polyacrylic-based adhesive, and combinations thereof.